

REMARKS

The Applicants appreciate the thoroughness with which the subject application has been examined and the allowance of claims 1-10 and 12. By this amendment, certain claims, as indicated above, have been amended to overcome the Examiner's rejections and more concisely claim and describe the present invention. Claims 1-15 remain in the application, with the Examiner invited to reconsider and allow rejected claims 11 and 13-15.

MATTERS RELATED TO THE CLAIMS

The Examiner has rejected claim 11 under 35 U.S.C. 102(b) as anticipated by Lebreton (4,979,755).

To further define the invention over the cited prior art, the Applicants have amended claim 11 as set forth above in the marked-up version of the claim. In particular, the Applicants have amended the last paragraph of the claim to read, "at least $2N + 1$ flow dams each supported by one of the seal segments."

As near as it is understood, Lebreton appears to disclose affixing a flow dam 26 at a leading edge and a trailing edge of each seal carrier 14. See Lebreton's Figure 1. As the Applicants state in the paragraph beginning at line 13 on page 8, "multiple flow dams 40 can be disposed at arbitrary intervals at any circumferential location around the shaft 10. Any number of flow dams 40 can be employed to reduce swirl as the number is not limited by the number of seal segments 14, as disclosed by the prior art." Since Lebreton discloses a maximum of two flow dams per seal carrier, the Applicants' invention as set forth in amended claim 11 is distinguished therefrom as the Applicants claim a number of flow dams equal to at least twice the number of seal carriers plus 1. By affixing his flow dams to only the leading and trailing edges of the seal carrier (seal segment) Lebreton is limited to $2N$ flow dams in the seal ring. Only the Applicants teach $2N + 1$ flow dams in the seal ring. It is further noted that the placement of flow dams at the leading and trailing edges of a seal carrier results in back-to-back flow dams where the leading edge of one seal carrier contacts the trailing edge of the adjacent seal carrier. The back-to-back flow dams provide little or no additional benefit than a single flow dam at the plane of contact between leading and trailing edges of adjacent seal carriers.

Further, it is respectfully submitted that there is no disclosure in Lebreton that would render the Applicants' invention as set forth in amended claim 11 obvious under Section 103(a) since Lebreton's technique for attaching the flow dams to the seal carriers limits the number of flow dams to twice the number of seal carriers. Only the Applicants teach a technique for providing a number of flow dams more than twice the number of seal carriers.

The Examiner has rejected independent claim 13 and dependent claims 14 and 15 depending therefrom under Section 102(b) as anticipated by Lebreton.

Lebreton discloses in the paragraph beginning at line 22 of column 5, "each seal carrier 14 along its leading edge 14C (Figure 1) is formed with a slot 24 for installation thereon of a flow dam 26." In the paragraph beginning at line 38 of column 5, Lebreton further discloses, "[t]he flow dams 26 shown in Figure 3, . . . are installed at the leading edge 14C of each seal carrier 14 (and at other circumferential locations as desired), but are so installed press-fit within a groove 32 in a similar manner as that which is employed for mounting of the seal legs 20." In claim 13, the Applicants teach, "forming a fin groove in each one of the seal fins; and disposing a flow dam within the fin grooves." Lebreton does not disclose these steps nor does he disclose the fin groove and disposing the flow dam within the fin groove, as the Applicants claim. Thus, it is respectfully suggested that independent claim 13 is patentably distinct from Lebreton.

As to dependent claims 14 and 15, depending from claim 13, it is respectfully submitted that each of these dependent claims includes one or more elements that further distinguish the invention over the art of record. These claims should therefore be in condition for allowance.

Further, it is respectfully submitted that there is no disclosure in Lebreton that would render the Applicants' invention as set forth in amended claim 13 and claims 14 and 15 obvious under Section 103(a) since Lebreton's discloses flow dams disposed within a groove at the leading edge of the seal carrier (and alternatively, along the leading and trailing edges of the seal carrier). Only the Applicants teach, "disposing flow dams within fin grooves."

The Applicants have attempted to comply with all of the points raised in the Office Action and it is believed that the remaining claims in the application, i.e., claims 1-15, are now in condition for allowance or have already been allowed. In view of the foregoing amendments and remarks, it is requested that the Examiner's rejections have been overcome. It is respectfully requested that the Examiner reconsider these rejections and issue a Notice of Allowance for all claims pending in the application.

If a telephone conference will assist in clarifying or expediting this Amendment or the claim amendments made herein, the Examiner is invited to contact the undersigned at the telephone number below.

Respectfully submitted,

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